IN THE CLAIMS

Please cancel claims 1 – 25 without prejudice to their consideration in a continuing application.

Please enter the following original claims prior to calculation of any claim fees:

1-25 (Cancelled).

26. (Original) A method of determining a property of a fluid using a sensing element comprising:

a flexible element movable from a first configuration to a second configuration via bending of said flexible element, said flexible element comprising an actuating portion arranged to move said flexible element between said first configuration and said second configuration, the method comprising:

inducing movement in said flexible element between said first configuration and said second configuration by applying a heat signal to said flexible element;

receiving a signal from said sensing element, said signal being indicative of the induced movement of the flexible element within said fluid; and

processing said signal to determine a value indicative of at least one property of said fluid.

27. (Original) A method as claimed in claim 26, wherein said signal is processed to determine a value indicative of at least one property of a group comprising viscosity, temperature, flow rate and shear rate.

28. (Original) A method as claimed in claim 27, further comprising:

determining a rate of change of movement of said flexible element, by monitoring a change in the received signal with time; and

determining a value indicative of the viscosity of said fluid from said rate of change of movement.

29. (Original) A method as claimed in claim 27, further comprising:

determining an amplitude of movement of said flexible element from said received signal for a given applied heat signal; and

determining a value indicative of the viscosity of said fluid from said amplitude.

30. (Original) A method as claimed in claim 27, further comprising:

determining a change in said movement of said flexible element; and

determining a value indicative of a flow rate of the fluid from said change in movement, said change in movement being due to flow of the fluid against said flexible element.

31. (Original) A method as claimed in claim 30, further comprising: determining a value indicative of a shear rate of said fluid by determination of the flow rate at a plurality of locations within said fluid.

32. (Original) A method as claimed in claim 26, wherein said actuating portion of said flexible element comprises a laminate of at least two layers, each layer having a different

coefficient of thermal expansion, and wherein, prior to induction of movement by application of the heat signal, a value indicative of the temperature of the fluid is determined.

33. (Original) A method as claimed in claim 26, wherein the device comprises a plurality of flexible elements, such that the plurality of flexible elements may be used to determine a value indicative of at least one property of said fluid in a plurality of locations.

34. (Original) A method as claimed in claim 26, wherein the device comprises a plurality of flexible elements, at least one of the plurality being used to cause a flow within the fluid, and at least one of the plurality being used to determine a value indicative of at least one property of said fluid.

35. (Original) A method as claimed in claim 26, further comprising holding the flexible element in at least one of said two configurations by a magnetic force.

36. (Original) A method as claimed in claim 26, further comprising holding the flexible element in at least one of said two configurations by an electrostatic force.

37. (Original) A method as claimed in claim 26, wherein said received signal is indicative of a maximum deflection of the flexible element,

said signal being processed to determine the viscosity of the fluid.

38. (Original) A device for detecting a property of a fluid comprising:

a body region;

a flexible element having a first end and a second end, said first end being fixedly located on said body region, said flexible element being arranged to move from at least a first configuration to a second configuration via bending of said flexible element;

said flexible element comprising a laminate of at least two layers and an actuating portion arranged to move said flexible element between said first configuration and said second configuration, the actuating portion being provided by at least a first layer of said laminate having a different coefficient of thermal expansion from a second layer of said laminate such that a change in temperature of said flexible element moves the flexible element from said first configuration to said second configuration;

said flexible element further comprising a heating element for heating at least said flexible element thereby providing said change in temperature; and

a movement detector arranged to detect said movement of said flexible element, and to provide a signal indicative of a property of a fluid in which the flexible element is immersed.

39. (Original) A device as claimed in claim 38, wherein said movement detector comprises a piezoresistive element located on said flexible element arranged such that the electrical resistance of the piezoresistive element changes due to movement of said flexible element.

40. (Original) A device as claimed in claim 38, further comprising latching means arranged to hold the flexible element in at least one of said two configurations.

41. (Original) A device as claimed in claim 38, wherein said movement detector comprises an electromagnetic radiation source arranged to direct radiation towards said element, and an electromagnetic radiation detector arranged to detect electromagnetic radiation at least one of: reflected from, transmitted through, refracted from or diffracted by said flexible element.

42. (Original) A device as claimed in claim 38, wherein at least one of the first and second layers of said laminate comprises a polymer.

43. (Original) A device as claimed in claim 42, wherein at least one of the first and second layers of said laminate comprises a material selected from a group consisting of polyimides, polyamides and acrylic polymers.

44. (Original) A device as claimed in claim 38, wherein the second layer of said laminate comprises a metal.

45. (Original) A device as claimed in claim 44, wherein the metal is selected from a group consisting of gold or aluminium.

46. (Original) A device as claimed in claim 38, wherein the length of the flexible element from the first end to the second end is between 100μm and 1mm, and wherein the distance between the second end of the flexible element in said first configuration and the second end of the flexible element in said second configuration is between 30μm and 650μm.

47. (Original) A device as claimed in claim 38, wherein the device comprises a plurality of flexible elements.

48. (Original) A device as claimed in claim 47, wherein the plurality of flexible elements are arranged in a first row and a second row, each row comprising at least one flexible element, the flexible elements being arranged such that the at least one flexible element of the first row extends in opposition to the at least one flexible element of the second row.

49. A device as claimed in claim 48, wherein the plurality of flexible elements are interdigitated.

50. (Original) A device as claimed in claim 39, wherein said piezoresistive element is located on the flexible element at a position remote from the body region.

51. (Original) A device as claimed in claim 39, wherein said piezoresistive element is formed as a layer of the laminate of said flexible element.